Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21 and 74 to Enable	)	MM Docket No. 97-217
Multipoint Distribution Service and	)	
Instructional Television Fixed Service	)	File No. RM-9060
Licensees to Engage in Fixed	)	
Two-Way Transmissions	)	
	)	
Request For Declaratory Ruling on the Use	)	
of Digital Modulation by Multipoint	)	
Distribution Service and Instructional	)	
Television Fixed Service Stations	)	

REPORT AND ORDER ON RECONSIDERATION

Adopted: July 13, 1999 **Released:** July 29, 1999

By the Commission:

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I. INTRODUCTION AND SUMMARY

1. In our order in *Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCC Rcd 19,112 (1998)("*Two-Way Order*"), we amended Parts 21 and 74 of our rules to provide licensees in the Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") with substantially increased operational and technical flexibility. Specifically, the rule changes were designed to allow these licensees, which had formerly provided primarily one-way video services, to provide a wide range of high-speed, two-way services to a variety of users. In this order on reconsideration, we make some additional rule modifications which we believe will further facilitate the provision of these services. In this order, we also resolve petitions for clarification filed in regard to our *Declaratory Ruling and Order, In the Matter of the Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations,* 11 FCC Rcd 18,839, 18,858 (1996)("*Digital Declaratory Ruling*").

II. BACKGROUND

2. The MDS service historically has provided point-to-multipoint one-way video transmission to subscribers[1] that is often referred to as "wireless cable." ITFS licensees traditionally have utilized their spectrum to transmit educational and instructional material to students.[2] The two services share spectrum in the 2500-2686 MHz band, which is divided into groups of 6 MHz channels. Although the ITFS/MDS

[1] 47 C.F.R § 21.903.

[2] 47 C.F.R. § 74.932.

spectrum is primarily used to provide either one-way video service to students or wireless cable service to subscribers, some of the subject spectrum has been used in recent years for the provision of two-way service.[3]

3. In order to subsidize their educational mission, ITFS entities may lease channel capacity on their licensed spectrum, which they are not using, to MDS operators, subject to certain technical limitations and programming requirements. As a result, there is a history of cooperation between ITFS licensees and MDS operators, with MDS operators providing funding used by ITFS licensees for their educational mission in exchange for the extra channel capacity needed to make most MDS systems viable. In light of this history of cooperation, the Commission adopted a new flexible deregulatory approach to both services, premised on cooperation between all the parties involved rather than on close Commission involvement in every possible dispute that may arise, especially in regard to interference problems.

4. The proceeding which resulted in the *Two-Way Order* was commenced in response to a petition for rulemaking filed by a group of over one hundred participants in the wireless cable industry,[4] including wireless cable system operators, MDS and ITFS licensees, equipment manufacturers and consultants,[5] who requested that the Commission amend its Rules to facilitate the provision of two-way communication services by MDS and ITFS licensees. Virtually all of the comments received in response to that petition, as well as virtually all of the comments received in response to the *NPRM* that we subsequently released, strongly supported amending our Rules to enhance the ability of licensees to provide two-way service. Although there was some disagreement on the specifics of how best to proceed in a two-way digital environment, support for the basic two-way concept was close to unanimous.[6]

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[3] *See Report and Order on Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act - Competitive Bidding,* MM Docket No. 94-131 and PP Docket No. 92-253, 10 FCC Rcd 9589, 9619 (1995) ("*MDS Auction Order*"); 47 C.F.R. § 21.903(b).

[4] A complete list of these parties (collectively "Petitioners") is contained in Appendix A. A list of parties who filed petitions for reconsideration is also contained in Appendix A.

[5] Petitioners filed their Petition for Rulemaking on March 14, 1997 and it was placed on Public Notice March 31, 1997. Pleading Cycle Established for Comments on Petition for Rulemaking to Amend Parts 21 and 74 of the Commission's Rules to Enhance the Ability of Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions, *Public Notice* RM-9060, DA 97-637 (rel. March 31, 1997). We considered the comments and reply comments filed in response to the March 31 Public Notice in its formulation of the proposals advanced in the *Notice of Proposed Rulemaking in the Matter of Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 12 FCC Rcd 22,174 (1997) ("*NPRM*"). On June 12, 1998, we released a Public Notice requesting comment on several *ex parte* presentations made subsequent to the release of the *NPRM* under our "permit-but-disclose" *ex parte* rules. *See* 47 C.F.R. § 1.1206. Those comments were due by July 2, 1998. *See Establishment of Period to Comment on Ex Parte Presentations, Public Notice,* 13 FCC Rcd 16,584 (1998). We adopted the *Two-Way Order* on September 17, 1998.

[6] Following the release of the *NPRM,* the Wireless Cable Association International, Inc. ("WCA") and the National ITFS Association ("NIA") crafted a *Joint Statement* which set forth a series of positions on various

III. DISCUSSION

5. Following the release of the *Two-Way Order*, we received petitions for reconsideration which primarily focused on requests that we: (1) expand our streamlined application processing to cover all ITFS modification applications; (2) adopt a method for the Commission to resolve interference complaints; and (3) make certain technical amendments to our rules. We address each of these and other issues in turn.

A. Application Processing Issues

6. In the *Two-Way Order*, we adopted a streamlined application processing system based on applicant certifications of compliance with the technical and notice rules, timely notice to all potentially affected parties and random audits of submitted applications.[7] We believed that failure to adopt such a streamlined system would be "seriously detrimental to the provision of two-way service."[8] We also concluded that failure to provide two-way service would jeopardize the survival of the MDS industry.[9] The majority of reconsideration petitioners advocate expanding the use of the streamlined processing system to all ITFS major modification applications.[10]

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issues including application processing, programming, recapture requirements and lease considerations in a two-way digital environment. In its petition for reconsideration, NIA argues that we should have adopted all of the recommendations contained in the *Joint Statement* without exception. Although we did adopt many of the recommendations of the *Joint Statement*, we did not adopt others, such as those relating to recapture rights. Instead, we adopted other solutions to the same issues that we believed served the public interest better than those proposed in the *Joint Statement*. For example, rather than adopt the *Joint Statement's* recommendations on recapture rights, we adopted a rule specifying that, in a digital environment, 5% of an ITFS operator's licensed spectrum must be reserved for its own use. *See Two-Way Order*, 13 FCC Rcd at 19,159. In a digital environment, this typically would result in greater capacity being set aside for ITFS usage than mandated by the old recapture rules. Our approach also provides greater certainty to MDS operators as to what spectrum will be available for their long-term use and greater flexibility to ITFS operators to negotiate leases than the proposals of the *Joint Statement* would provide. In any event, if we had simply adopted the *Joint Statement* verbatim and rejected other proposals that we found better served the public interest, we would have not been fulfilling our obligations.

[7] *Two-Way Order*, 13 FCC Rcd at 19,146-50.

[8] *Id.* at 19,146.

[9] *Id.*

[10] *See*, *e.g.*, Petitions of Catholic Television Network ("CTN"), BellSouth Corporation ("BellSouth"), and Petitioners. In contrast, the Instructional Television Foundation ("Foundation") argues that we should not have adopted the streamlined application processing system at all. *See* Foundation Petition. In the *Two-Way Order*, we extensively discussed the public interest necessity for adopting a streamlined MDS application process and the safeguards built into such a process to prevent abuse and to protect against non-consensual interference. It is unnecessary to repeat that discussion here. The Foundation has not offered any argument that persuades us to reconsider the adoption of the streamlined process.

7. BellSouth and other parties argue that it may be necessary to modify the main MDS and ITFS stations as operators reconfigure their systems for cellularization, sectorization and two-way services.[11] This could require major changes to ITFS stations that would be precluded under our present rules without a filing window. These parties contend that the delay and uncertainty that would result from having to wait for such a window could prevent some systems from being built at all and thereby deny service to the public.[12] In contrast, the greater certainty that would result from simultaneous processing would enable business plans to be more reliable and operation timelines to be more predictable.[13] The parties contend these factors would encourage investment in the MDS industry, would increase the value of ITFS spectrum and would facilitate service to the public.[14] In addition, as several reconsideration petitioners note, by placing ITFS major modifications in the streamlined processing system, any ITFS major modification applications submitted during the initial one-week filing window or any subsequent one-day rolling filing window that interfere with any simultaneously filed applications would not be treated as mutually exclusive and would not be subject to auction.[15] Finally, adopting the streamlined procedures for ITFS major change applications would be consistent with our streamlining goals. We agree with these arguments of the various petitioners and will implement the system as stated below.

8. The procedure we adopted in the *Two-Way Order* will utilize a rolling, one-day filing window for MDS/ITFS applications for response station hubs and boosters.[16] That procedure will now be extended to all ITFS modification applications. Each applicant will have to provide interference protection to all facilities existing or proposed prior to the filing of its application, but its application will take precedence over all subsequently filed applications. Applications filed in the initial window or on the same day, in the case of the one-day rolling window, will not be treated as mutually exclusive by the Commission, and it will be the responsibility of the parties to resolve any conflicts. Because parties will be unable to offer reliable service without resolving such conflicts, we believe the incentive to reach a resolution will be so great that Commission involvement will be unnecessary to resolve disputes.[17]

9. The applicant will be required to certify that it has met all requirements regarding

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[11] BellSouth Petition.

[12] *See, e.g.,* Petitions of BellSouth and Petitioners.

[13] *Id*.

[14] *Id.*

[15] Petition of UT Television, oppositions of Petitioners and Region IV Educational Service Center, *et al*. ("Region IV). As Region IV points out, subjecting mutually exclusive ITFS applications to auction would create an unfair burden on smaller educators with limited resources.

[16] The streamlined application process is set out in the *Two-Way Order* at 13 FCC Rcd 19,146-50.

[17] *See also* discussion at ¶¶ 16 to 21, *infra.*

interference protection to existing and prior proposed facilities.[18] The applicant will also be required to certify that it has served all potentially affected parties with copies of its application and with its engineering materials. The engineering analysis for two-way systems must comply with the methodology set out in Appendix D to the *Two-Way Order*, which is also Appendix D to this document. The applicant must also certify that it has obtained any necessary consent letters in lieu of interference protection. Any application that does not contain the proper certifications will be dismissed with prejudice and will lose its priority over subsequently filed applications.

10. The Commission will rely on the applicant's certifications in issuing licenses and will not conduct an independent engineering review of each application filed. The applicant will only be required to file the application form with the Commission. However, in the interest of making sure that engineering information is available to all present and future affected parties, applicants will be required to provide copies of their applications, with all of their engineering materials, in both hard copy and on disk,[19] to the Commission's contractor for public service records duplication, International Transcription Services, Inc. ("ITS"), located in Portals II, 445 12th Street, S.W., Room CY-B402, Washington, D.C. 20554 and to certify on their application they have done so.[20] Because the ready availability of complete applications to interested parties is essential to the functioning of the application processing system, failure to certify that the application and supporting material have been provided to ITS will result in dismissal.[21]

11. In order to monitor applicant compliance with our Rules and to protect the integrity of the certification process, the staff will conduct random audits, either prior to the expiration of the 60-day petition to deny period, described below, or after a license has been issued in reliance on a certification. In the event that an audit reveals that an applicant improperly certified or that an application contains a material error, the application could be subject to dismissal or the license subject to revocation. In addition, if there is evidence that a certification was made in bad faith, we delegate to the Mass Media Bureau the authority to impose a monetary forfeiture or it may refer the matter to the Commission for designation for hearing.

12. The staff will review applications to make sure all required materials are included, excluding all engineering showings submitted to ITS. Complete applications filed with the proper certifications will be placed on public notice without further review. As we stated in the *Two-Way Order* we believe placing the applications on public notice without prior staff interference analysis will serve to speed

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[18] We believe this certification requirement adopted in the *Two-Way Order* addresses CTN's concern that applicants be required to certify to the accuracy of their interference analysis. *See* CTN Petition.

[19] The document is to be filed in hard copy and on a 3.5" IBM formatted 1.44 MB DSHD computer diskette in ASCII coding, and shall contain all necessary engineering showings for two-way systems as set out in Appendices C and D.

[20] Our Rules require service of the engineering material on all potentially affected parties at the time of filing in addition to service on ITS. This is to insure that the relevant material is available to all interested parties. Because the two-way engineering showings will already be available to the public and because the staff will not be reviewing it absent a petition to deny or an audit, filing the data with the Commission, as CTN requests, would simply be unnecessary duplication. *See* CTN Petition.

[21] Any two-way application that is incomplete in any respect will not be accepted for filing.

the review process by making the relevant data available to all interested parties as quickly as possible.[22] Parties will have 60 days from the date of the public notice to file petitions to deny against the application. Due to the complex nature of the engineering matters, we believe a 60-day petition to deny period is more reasonable than the usual 30-day period. If no petitions to deny are received, the application shall be granted. However, after a complete and properly certified application is granted, if a new facility operated pursuant to that grant causes non-consensual interference to any protected facility it must immediately cease operations, regardless of whether any petitions to deny were filed against the application during the application process. The burden of proving that a facility is not causing non-consensual interference lies on the licensee following the filing of a documented complaint of interference by an affected party.[23]

13. As discussed in the *Two-Way Order*, it is likely that a large number of applications will be filed once the new rules become effective and that many of the applications submitted at that time may conflict with others filed simultaneously. In order to smooth the transition to the rolling one-day filing window application processing system, we adopted a special one-week initial filing window, the opening of which will be announced by public notice. All applications filed during that week will be deemed filed as of the same day. Following the publication of a public notice announcing the tendering for filing of applications submitted during that window, applicants would have a period of 60 days to amend their applications to resolve conflicts, provided such amendments do not result in any increase in harmful interference to any previously proposed or authorized station (including facilities proposed during the window), absent consent of the applicant for or licensee of the station that would receive such interference. During this 60-day period, no additional applications could be filed, affording those who filed during the one-week window an opportunity to resolve any conflicts without fear that, during the pendency of settlement discussions, third parties will propose facilities that will have to be protected.

14. At the conclusion of that 60-day period, we will release a public notice of the acceptance for filing of all applications submitted during the initial window, as amended during the 60-day period. Interested parties will then have 60 days from the date of that public notice to file petitions to deny. Following the 60-day period, all properly certified, unopposed applications shall be granted. On the 61st day after the date of the second public notice, the rolling one-day filing window will be in effect.

15. We note here that we will not tolerate frivolous petitions to deny which are intended to delay the streamlined process. Such petitions will be promptly dismissed and the parties subjected to

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[22] In its petition, the Foundation asserts that we are abandoning our public interest obligations by not performing a substantive engineering review of each application prior to its grant. Instead, the Foundation argues we should adopt a system where the staff performs site-specific analysis of each application and then evaluates the relative merits of any conflicting applications. *See* Foundation Petition. We strongly disagree. The system established here, with its certifications, notifications, audits, petitions to deny and the requirement of immediate shut-down in the case of non-consensual interference, will protect the public interest in receiving interference-free, reliable service and make it possible for such service to be delivered rapidly. In contrast, the approach advocated by the Foundation would slow processing to a crawl and would threaten the competitive viability of this particular service. For the reasons discussed at ¶ 18, *infra*, we also reject the Foundation's argument that the staff should evaluate the relative merits of mutually exclusive applications.

[23] The definition of "documented complaint" and proposals for an interference resolution procedure are discussed at ¶¶ 16 to 19, *infra.*

appropriate sanctions. For example, a petition to deny based on the claim that an application is mutually exclusive with a contemporaneously filed application will be frivolous and promptly dismissed. By contrast, a petition to deny that asserts non-consensual interference with a previously applied-for facility will invoke staff review of the subject application and result in its removal from the streamlined process. If the petition to deny is granted, the application will be denied and the applicant would have to re-file, losing its filing priority. Therefore, it is essential for applicants to be certain of the accuracy of their filings and to take every possible step to insure they will not create unwanted interference before they even file their applications. Except during the 60-day period following the initial filing window, the streamlined process does not allow for amendments to applications. To do so would throw the entire process into chaos because parties would be unable to rely on the accuracy of previously filed applications whose proposed facilities they are required to protect. An amendment to any one application could result in a cascade of amendments to subsequently filed applications. Therefore, we strongly urge parties to carefully review the accuracy of their applications and to resolve any potential conflicts that would make their applications subject to legitimate challenge. Otherwise, they risk denial of their applications and the loss of filing priority.

B. Interference Complaints

16. Some petitioners have asked that the Commission adopt interference resolution procedures,[24] while other parties have asked us to abandon our decision to not treat any simultaneously filed applications as mutually exclusive.[25] In addition, other petitioners, including CTN, have asked that we clarify the term "documented complaint." For the reasons stated below, we decline to adopt the advocated interference resolution procedures and decline to change our earlier decision regarding mutually exclusive applications. We will clarify, however, the term "documented complaint."

17. In the *Two-Way Order* and under our rules, we repeatedly emphasized that any two-way facility that causes unauthorized that is, (non-consensual) interference to any protected facility must immediately cease operations.[26] This rule applies regardless of whether any petitions to deny were filed during the application process. Furthermore, we stated:

> The burden of proving that a two-way facility is not causing unauthorized interference lies on the two-way licensee following the filing of a documented complaint of interference by an affected party.[27]

Considering the severity of the penalty for interference, the placing of the burden of proof, and the fact that a party cannot resume operation absent an appropriate determination authorizing such operation, we believe that the incentives for the parties to act as fast as conceivably possible to resolve such complaints already exist. These incentives should result in complaints being resolved much more quickly than would be the case if we adopted one of the proposed complaint resolution procedures, such as the almost five-month

[24] *See, e.g.*, Petitions of BellSouth and CTN.

[25] Foundation Petition.

[26] *Two-Way Order*, 13 FCC Rcd at 19,142.

[27] *Id.* at 19,149.

process proposed by BellSouth.[28] These incentives should also provide more than adequate protection to the interests of ITFS licensees. Since in most cases a simple on-off test will demonstrate whether a facility is causing harmful interference and since such a test can be performed very quickly, we do not believe that MDS operators are seriously burdened by this process. In those very rare cases where Commission analysis is needed to resolve the complaint, we believe our existing processes are sufficient. Therefore, we will not adopt any new formal complaint resolution procedure.

18. The Foundation has proposed that we abandon our decision to never treat simultaneously filed ITFS and/or MDS modification applications as mutually exclusive.[29] The Foundation contends that the system we adopted could result in three possible outcomes: (1) one party builds, blocking service by the other, (2) both build, but are not able to offer reliable service, and (3) no one builds and the two parties between them block other construction.[30] As we repeatedly emphasized in the *Two-Way Order*, the system we have adopted is based in large part on the history of mutual cooperation between MDS and ITFS licensees and the very real interdependence, both technically and financially, of those entities.[31] In almost every instance, an MDS operator cannot be competitive without access to ITFS channels. Likewise, few ITFS entities can build their facilities without income from MDS lessees. Therefore, the three outcomes that the Foundation predicts are improbable as between MDS and ITFS licensees. In the case of conflicted MDS operators, failure to resolve the conflict will create uncertainty in the ability of the operators to offer service and will make it difficult for either party to finance system construction. Failure to construct the relevant systems will result in continuing lost revenue for all of the affected parties. These results will compel the parties to find a mutually satisfactory resolution as quickly as possible.

19. We do agree with CTN and other parties that we need to clarify what is meant by a "documented complaint." The bulk of our enforcement activities in this area will be based upon such "documented complaints" and guidelines need to be established for the form of such complaints. In order to invoke Commission action and to compel shutdown of an MDS facility,[32] a complaint must contain a certification that the complainant has contacted the operator of the allegedly offending facility and tried to resolve the situation before filing. The complaint must then specify the nature of the interference, whether the interference is constant or intermittent, when the interference began and the site(s) most likely to be causing the interference. Where possible, complainants should submit a videotape or other evidence showing the effects of the interference. The complaint must also contain a motion for a temporary order to

[28] BellSouth Petition.

[29] Foundation Petition.

[30] *Id.*

[31] *See, e.g., Two-Way Order*, 13 FCC Rcd at 19,147.

[32] We note here that it will rarely, if ever, be necessary to shut down an entire MDS system for causing unauthorized interference. Interference is most likely to be caused by one, or no more than a very few, transmitters, most likely at response stations. In a case of non-consensual interference, only the particular site(s) alleged to be causing interference may have to be shut down. The notice requirements will provide licensees of facilities harmed by the interference the knowledge to specify which two-way facility or combination of facilities are the probable source of the interference.

have the interfering station cease transmitting. The complaint must be filed with the Secretary's office and served on the allegedly offending party. Service shall be in accordance with §§ 1.4 and 1.47 of our Rules.[33] Complained-against parties will have 2 business days from the date of filing to respond to the complaint. We emphasize again that the burden of proof lies with the complained-against party. *If we find in favor of the complainant, we shall order immediate shut-down of the facility.* The operator of the shut-down facility will be required to submit proof that the interference has been cured before it is allowed to recommence operations.[34]

C. Interference

1. Protection of ITFS Stations

20. In the *Two-Way Order*, we granted a protected service areas ("psa") to every ITFS licensee[35] and granted individual protection to all receive sites registered through the date of adoption of the *Two-Way Order.*[36] We explained that the psa protection "shall comprise an area within a 35 mile radius of the licensee's registered receive sites, [and] shall be in addition to the registered receive site protection currently enjoyed by ITFS licensees."[37] Based on these actions, we halted registration of ITFS receive sites.

a. Registration of ITFS Receive Sites

21. CTN asks us to clarify that the Commission will continue to register ITFS receive sites.[38] Instead, we make clear that we will no longer do so. Although CTN acknowledges that 47 C.F.R. § 74.903(a)(5) states that receive sites more than 35 miles from the main transmitter are not entitled to interference protection, it contends that this rule is designed to limit the ability of an ITFS licensee to extend

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[33] CTN has proposed allowing service to be by either fax or e-mail. Because there is no guarantee that anyone will be present to receive a fax or e-mail at the time it is sent, we do not believe that either of those methods are sufficient to effect service on a party when very short response periods are involved.

[34] The complaint process shall apply to all interference complaints, including those based on brute force overload ("BFO").

[35] *Two-Way Order*, 13 FCC Rcd at 19,173. Prior to that decision, only ITFS licensees who leased excess spectrum capacity to a wireless cable operator were availed of the opportunity to enjoy psa protection.

[36] *See, e.g.*, 47 C.F.R. § 74.903(d).

[37] *Two-Way Order*, 13 FCC Rcd at 19,173 n.296. Petitioners recognize that § 74.903(d) of the new rules cross-references 47 C.F.R. § 21.902(d)(1), which provides for a psa within a 35 mile radius from the transmitter site, as defining the area of the psa. *See* Petitioners Petition. Indeed, our definition of the psa recited in note 296 of the *Two-Way Order* is erroneous, and we clarify that the ITFS licensee's psa is a 35 mile circle centered either on the fixed reference point of the associated wireless cable system, or on the authorized ITFS main station transmitter site, as elected by the ITFS licensee.

[38] CTN Petition.

protection unfairly beyond its actual service area, and can be waived if a licensee can demonstrate that a receive site farther from the main transmitter actually receives service.[39] This position is inconsistent with the plain meaning of the rule. Limiting protection to a 35 mile radius provides certainty to cochannel and adjacent channel entities, especially now that booster stations can originate signals.[40] Nevertheless, we affirm that receive sites registered as of the adoption date of the *Two-Way Order* continue to receive protection of their specific parameters and that applicants for new or modified MDS or ITFS stations are required to demonstrate protection of such sites.[41] Furthermore, we emphasize that a receive site is entitled to protection as of the filing date of the application listing it.[42]

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[39] CTN Petition.

[40] *See* 47 C.F.R. § 74.985(a) and (b)(2).

[41] *See* 47 C.F.R. §§ 21.902(i)(1) and 74.903(b).

[42] In a footnote to its petition, CTN poses that the new rules granting all ITFS licensees psa protection "appear to violate" the Administrative Procedure Act ("APA"), because, CTN asserts, they were not proposed in the *NPRM*. CTN casts the issue as follows: "In the [*NPRM*], the Commission did not suggest that, aside from the two-way rules, it would adopt a rule which would change the procedures for preparing interference analyses for ITFS stations generally, nor can these rules be considered 'logical outgrowths' of any proposals that were published." CTN Petition. In the *Two-Way Order*, we decided to grant all ITFS licensees psa protection "[i]n recognition of concerns such as those expressed by the Foundation," a licensee of several ITFS systems. *Two-Way Order*, 13 FCC Rcd at 19,173. We depicted how the Foundation sought redress of a subtle form of coercion of ITFS licensees -- and thus a potential affront to their autonomy -- in that an ITFS licensee that offered broadband services pursuant to a lease with a wireless cable operator would enjoy psa protection, but an ITFS licensee that provided exactly the same services on its own would not. The Foundation feared that this discrepancy would mandate the leasing of excess channel capacity by ITFS licensees suspicious of incurring interference in a two-way environment and in the absence of psa protection. *Id.* In reaching this decision, we also were cognizant of the Foundation's argument that solely protecting registered receive sites of instructional-only ITFS systems would risk an erosion of coverage capability "in Swiss cheese fashion" by boosters and other newly proliferating sources of potential interference.

These concerns of the Foundation, to which we responded in the *Two-Way Order*, themselves were a direct response to the *NPRM* (and, we note, were articulated in a section of its comments styled by the Foundation "Insuring Autonomy for ITFS Licensees and the Viability of Instructional Service." Foundation Comments at 14). As the Commission framed the issue in the *NPRM*: "[W]e seek additional comment on specific potential threats to the engineering autonomy of ITFS licensees which could result from institution of the proposed two-way framework; in conjunction with such comment, we further seek proposed solutions." *NPRM*, 12 FCC Rcd at 22,210. In addition, while CTN suggests that our adoption of psa protection for all ITFS licensees is an "aside from the two-way rules," CTN Petition, the Foundation's Comments illustrate how such protection is necessitated by the nature and quantities of interference sources that will result directly from the rules adopted in the *Two-Way Order* and proposed in the *NPRM*. Finally, in an *ex parte* filing Petitioners addressed the proposal to grant all ITFS licensees psa protection, stating that they did not object to the proposal. Letter from Paul J. Sinderbrand to Magalie Román Salas (March 5, 1998), *Ex Parte* Presentation. Subsequently, a Commission Public Notice was issued establishing a

b. Point-to-Point ITFS Licensees

22. BellSouth urges the Commission to create an exception to Section 74.903(d) of the new Rules, stating that point-to-point ITFS stations are not entitled to a psa, because psa protection is irrelevant to their institutional needs, results in overprotection and spectral inefficiency, and causes unintended adverse consequences. BellSouth also states that the Commission has accorded secondary protection to point-to-point ITFS stations and adds that a point-to-point ITFS licensee which seeks to modify its facilities to provide point-to-multipoint services can do so subject to the interference protection rights of incumbents. Although the Commission has licensed ITFS point-to-point studio to transmitter links on a secondary basis,[43] BellSouth's characterization of all ITFS point-to-point operations as "secondary" is inaccurate.[44] Furthermore, adopting BellSouth's requested exception would place an unacceptable burden on ITFS licensees who wish to convert from point-to-point to point-to-multipoint transmission in the future, perhaps even precluding such a change. Thus, we decline to adopt the exception to automatic psa protection requested by BellSouth for point-to-point operations.

2. Response Stations: Advance Notification and Professional Installation

23. In the *Two-Way Order*, we created a zone ("notification zone") with a radius of 1960 feet around each ITFS registered receive site, and required that the associated hub station licensee notify the appropriate ITFS licensee by certified mail at least 20 days prior to the activation of any response station

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comment period on the "*ex parte* presentations subsequent to February 9, 1998 in this docket." *See* "Establishment of Period to Comment on Ex Parte Presentations Responsive to Notice of Proposed Rulemaking to Amend Parts 1, 21 and 74 of the Commission's Rules to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions," *Public Notice*, 13 FCC Rcd 16,584 (Mass Media Bur. 1998). Thus, our granting of psa protection to all ITFS licensees is consistent with the APA.

[43] *See Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules, Pertaining to Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, Notice of Proposed Rule Making and Notice of Inquiry*, 5 FCC Rcd 971, 974 (1990).

[44] *See Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, Report and Order*, 5 FCC Rcd 6410, 6415 (1990) ("*Wireless Cable Order*"). The Commission stated there:

> We cannot find that displacement of point-to-point ITFS services on ITFS frequencies by omnidirectional ITFS services will provide inherently more valuable or desirable service, even though refusing to permit involuntary displacement in such circumstances may reduce, in some cases, the ITFS excess capacity that might be leased to wireless cable operators if such displacement were permitted.

within such a zone. We stipulated that the notification must contain the street address and geographic coordinates of the response station; a specification of the station's EIRP, antenna pattern, orientation, polarization, height above mean sea level ("AMSL") and channels to be used; and the name and telephone number of a contact person who will be responsible for coordinating the resolution of any interference problems.[45] We also required that all response station transmitters be installed professionally to minimize BFO,[46] to help prevent cochannel and adjacent channel interference,[47] and to minimize the risk of human exposure to potentially hazardous radio-frequency ("RF") emissions.[48]

24. A number of the parties request that we modify these requirements. Several parties maintain that the advance notification and professional installation requirements pose a competitive impediment because MDS operators will be alone in being unable to provide rapid installation or a retail distribution channel, unlike other services including cable television or satellite antenna master television ("SMATV").[49] CTN regards these arguments as "flawed," in that these other services do not use radio-frequency transmissions for return paths, and thus interference issues are not a concern. Petitioners respond that "[p]rospective customers do not care about differences in technology or whether a service provider is sharing spectrum with ITFS licensees - they want their service immediately."[50]

a. Response Stations Operating at +18 dBW EIRP or less, and/or on MDS Channels 1 or 2/2A

25. Petitioners asked for reconsideration of our imposition of advance notification and equipment installation requirements for response stations utilizing a transmit power of 18 dBW EIRP or less.[51] Petitioners argue that, when no more than 18 dBW is used at a response station with digital modulation operating as part of a two-way cellularized system in the 2500-2686 MHz band, no 20-day notification requirement or professional equipment installation requirement should be imposed for protection of ITFS receive sites.[52] In lieu of these requirements, Petitioners propose that "improved" frequency downconverters be provided by hub station licensees to all ITFS receive sites within 1960 feet of the hub station's response service area ("RSA").[53] The proposed downconverters would be required to suppress non-

[45] *Two-Way Order*, 13 FCC Rcd at 19,142.

[46] *See id.* at 19,134.

[47] *Id.* at 19,141.

[48] *Id.* at 19,128.

[49] Petitioners Petition.

[50] Dallas County Opposition; Petitioners Reply.

[51] Petitioners Petition.

[52] *Id.*

[53] *Id.*

cochannel and non-adjacent channel signals by an amount equal to, or greater than, (4 - A - B) dB, where A represents the downconverter's maximum input power capability (in dBm) and B represents the sum of the power (in dBm) of the desired signals at the input of the downconverter.[54] Petitioners additionally requested that the Commission reconsider, and eliminate, the requirements for advance notification and professional installation of digital response stations operating as part of a two-way cellularized system in the 2150-2162 MHz MDS band, irrespective of EIRP utilized.[55] Petitioners argue that these requirements are unnecessary because interference to ITFS stations operating in the 2500-2686 MHz band should not occur due to the separation of over 300 MHz between these bands.[56]

26. In response to Petitioners' proposal to install improved downconverters in circumstances where interference could occur, CTN states that they would not oppose an exemption from the notification and installation rules for stations utilizing 18 dBW or less EIRP, provided that "the replacement downconverters meet an agreed-upon standard for resistance" to overload.[57] Specifically, CTN recommends the following standards for such downconverters: (1) a third-order intercept point of 30 dBm; (2) a conversion gain of 32 dB, or the same gain as the existing downconverter, whichever is less; and (3) a noise figure of no greater than 2.5 dB, or no more than 1 dB greater than the noise figure of the existing downconverter, whichever is greater.[58] Responding to this proposal, Petitioners state that they do not object to CTN's specifications, and note that, if downconverter interference occurred despite installation of such a replacement unit, then the hub station operator would still be responsible for curing such interference by deploying an even better downconverter and/or utilizing other interference mitigation techniques previously identified by Petitioners.[59] Petitioners' request to exempt stations in the 2150-2162 MHz band from notification and installation requirements is opposed by CTN, which argues that such stations still pose a threat of downconverter overload to ITFS stations in the 2500-2686 MHz band.[60]

27. We believe the proposal for the replacement of existing downconverters with newer, more interference resistant, models in certain circumstances and modifying the notification rules protects the interests of ITFS stations while removing the competitive disadvantage to MDS operators. We are therefore amending our rules to eliminate the notification and professional installation requirements for digital response stations in two-way cellularized systems utilizing no more than 18 dBW EIRP, contingent upon the operator of the associated hub station providing and installing replacement downconverters at registered ITFS receive sites within the outer edge of the RSA and beyond to a distance of 1960 feet. The technical

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[54] *Id.*

[55] *Id.*

[56] *Id.*

[57] CTN Opposition.

[58] *Id.*

[59] Petitioners Reply.

[60] CTN Reply.

specifications of the replacement downconverters shall, at a minimum, be consistent with those set out in ¶ 26, *supra.* We are also adopting Petitioners' suggested procedures for implementation of such arrangements, namely: (1) the proposal to upgrade downconverters should be made in writing and served on the affected ITFS licensee, conditional licensee or applicant at the same time the application for the response station hub license is served on cochannel and adjacent channel ITFS parties; (2) any objection by ITFS parties would have to be made within the 60-day period allowed for petitions to deny the hub station application, setting forth the specific reason(s) for the objection; (3) if no objection is filed, the offer for downconverter replacement will be deemed to have been accepted; and (4) if an objection to downconverter replacement is filed, the hub station application would nevertheless be granted, subject to the Commission's requirements for notification and professional installation. This arrangement should facilitate the installation of very large numbers of response stations without the need for notification or professional installation.

28. We are not adopting Petitioners' request to totally exempt response stations in the 2150-2162 MHz MDS band from notification and professional installation requirements, although such stations utilizing no more than 18 dBW EIRP are included in the provisions above. We do not find, and Petitioners did not provide, good cause for exempting stations in this band utilizing more than 18 dBW from these requirements. Despite the fact that this band is separated by over 300 MHz from the ITFS channels, we agree with CTN that the potential for downconverter overload still exists, although it should be significantly easier to eliminate, such as with the use of relatively inexpensive filters. Moreover, with respect to the equipment installation requirement, we are retaining this rule provision for all MDS and ITFS stations using more than 18 dBW EIRP because of our concerns relating to the potential for deleterious effects from human exposure to high-power microwave emissions.[61] The Commission has adopted specific regulations relating to RF exposure and we believe these provisions could be compromised if professional installation requirements were eliminated for MDS and ITFS response stations operating at an EIRP in excess of 18 dBW.[62] For stations operating up to and including 18 dBW EIRP, we believe that the probability of harmful exposure is sufficiently limited that it should not be an impediment to implementing the exemption from professional installation sought by the Petitioners.

29. Our provisions for limiting RF exposure in the MDS and ITFS bands[63] require a routine environmental evaluation if: (1) a non-building-mounted antenna less than 10 meters above ground is used and the station EIRP is greater than 1640 watts; or (2) a building-mounted antenna is used and the station EIRP is greater than 1640 watts. The professional installation exemption we are adopting is for response stations utilizing a maximum of 18 dBW EIRP, which corresponds to a power of 63 watts EIRP. Using the formulation 20 log(D1/D2) = 10 log(P1/P2), where D1 = 10 meters, P1 = 1640 Watts EIRP, and P2 = 63 Watts EIRP, the term D2 can be calculated to be approximately 2 meters, which is the distance at which a 63 Watt EIRP signal would produce an RF exposure level equivalent to that produced by a 1640 Watt EIRP signal at a distance of 10 meters. However, even this estimate for D2 is very conservative (*i.e.* too large) because, at that distance from a response station dish antenna, any object would be in the "near field" of the antenna, *i.e.*, within the area where the lobe of the antenna is not yet fully formed and where the field of the antenna is dispersed over a relatively wide area as a fraction of the distance from the reflecting surface of the antenna. Moreover, as the antennas in these systems will, of necessity, be mounted so as to have a line-of-

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[61] *Two-Way Order,* 13 FCC Rcd at 19,129; 47 C.F.R. § 1.1307.

[62] *Id.*

[63] *See* 47 C.F.R. § 1.1307.

sight path to their associated booster and hub stations, it is reasonable to expect that they will be mounted at roof level or above, where there is little probability of RF exposure to humans. As an additional safeguard, however, the current provisions of Sections 21.909(m) and 74.939(o) of our Rules will be amended. These sections now provide that response stations can be operated only when engaged in communications with their associated hubs, boosters or primary stations, and radiation of unmodulated carriers or other unnecessary transmissions are prohibited. We are amending these rules to also provide that response stations can only be initially activated, or reactivated if relocated, by a signal from a booster or primary station, and that hub licensees have a means to remotely deactivate any subscriber's response station transmitter within their RSA. These provisions should give an added measure of control to system licensees useful for conducting interference tests and other system evaluations, and will result in a positive "interlock" feature that prevents inadvertent activation of a newly installed response transmitter when the response antenna is not properly installed so as to receive signals from the associated main or booster transmitters.

30. In its petition, Qualcomm Incorporated ("Qualcomm") requests that the Commission: (1) amend the rules to eliminate (1) the notification and professional installation requirements for MDS and ITFS response stations with EIRP no greater than -6 dBW; (2) the requirement that response stations utilize directional receiving antennas; and (3) the requirement that response stations utilize directional transmitting antennas.[64] Qualcomm argues that the notification/installation regulations should not apply to stations with an EIRP no greater than -6 dBW (1/4 watt) because such stations pose an extremely low potential threat for causing downconverter overload.[65] Virtually all parties commenting on the issue support Qualcomm's request.[66]

31. Qualcomm also argues that Section 21.906(d) of our Rules, which requires the use (except at hub stations) of directional receiving antennas at MDS stations, has "outlived its regulatory usefulness" and should be deleted. Qualcomm states that this rule conflicts with 47 C.F.R. § 21.906(a), which provides for omnidirectional transmitting antennas at some MDS stations in certain circumstances, and is in conflict with recently-adopted 47 C.F.R. § 21.909(g)(4), which governs the use of transmitting antennas at MDS response stations. Qualcomm also wants 47 C.F.R. § 74.937(b) amended to eliminate what Qualcomm sees as an ambiguity within the rule and a possible inconsistency with a portion of 47 C.F.R. § 74.931. These rules require the use of directive transmitting antennas "whenever feasible" at certain ITFS stations, except that omnidirectional transmitting antennas may be used when the stations are leased to provide a commercial service. Qualcomm asks that the provisions of 47 C.F.R. § 74.939(g)(4), which governs the use of transmitting antennas at ITFS stations, be referenced as an exception to the requirements of 47 C.F.R. § 74.937(b). Qualcomm argues that the sections of both Part 21 and Part 74 of our Rules which it wishes amended are not appropriate for response stations in two-way systems, as such stations "will utilize a common antenna for transmissions and reception," and it would be impractical and unnecessary for a response station to have one antenna for transmitting and a separate antenna for receiving.[67] Additionally, such a requirement would not be compatible, Qualcomm argues, with their low power response station, a small desktop unit with a short omnidirectional whip antenna, which will be readily available for consumer

[64] *Id*.

[65] *Id*.

[66] Opposition of Petitioners and CTN. *See, also*, Petition of Dallas.

[67] Qualcomm Petition.

purchase and installation.[68]

32. We agree with Qualcomm, CTN and others who support elimination of the notification and installation requirements for stations with EIRP no greater than -6 dBW, and we are amending our rules accordingly. The problems these requirements were meant to address, downconverter overload and unsafe exposure to RF emissions, are very unlikely to be caused by such low power stations, even those within 150 feet of an ITFS receive site. Should such interference occur, it will still be the responsibility of the hub station licensee to provide a remedy. Therefore, response stations with an EIRP no greater than -6 dBW do not need to comply with the advance notification and professional installation requirements; stations with an EIRP between -6 dBW and 18 dBW are subject to those requirements only within the notification zone subject to those exceptions set out herein; and stations with an EIRP greater than 18 dBW are always subject to the professional installation requirements and, subject to some exceptions, to the notification requirements when within the notification zone.

33. With respect to Qualcomm's proposed amendments of the response station antenna rules, we find the modifications as suggested would be contrary to the clear meaning of our proposals and actions in this proceeding. Specifically, with respect to MDS response stations, we proposed and adopted 47 C.F.R. § 21.906(d), which requires that directional receiving antennas be used. This rule is completely consistent with 47 C.F.R. § 21.909(g)(4) which states that "each response station shall employ a transmission antenna oriented towards the response station hub...." The unambiguous meaning of this language is that the MDS response station transmitting antenna must also be directional, as the phrase "oriented towards" would otherwise be meaningless. Qualcomm's reference to omnidirectional antennas in 47 C.F.R § 21.906(a) is inapposite, as this section applies only to antennas at primary (and booster) MDS stations. With respect to ITFS response stations, 47 C.F.R. § 74.937(a) calls for ITFS response stations to use directional receiving antennas and allows licensees to install receiving antennas with performance superior to the specifications set forth at Figure I, Section 74.937(a). Also, 47 C.F.R. § 74.939(g)(4) states that "each ITFS response station shall employ a transmission antenna oriented towards the response station hub...." Clearly, as with MDS stations, the unambiguous meaning of this language is that the ITFS response station transmitting antenna must be directional. Qualcomm's reference to language in 47 C.F.R. § 74.931(e)(7) permitting omnidirectional ITFS transmitting antennas in certain circumstances is inapposite, as this text applies only to antennas at primary (and booster) ITFS stations.

34. Although response stations in general are not permitted to use omnidirectional antennas, stations operating at the very low EIRP proposed by Qualcomm will have little potential to interfere with other systems irrespective of the type of antennas used. Qualcomm's use of low power transceivers which can be placed on a desk or other convenient indoor location to provide high speed wireless internet access is, we believe, an appropriate and innovative use of this spectrum and should be accommodated if at all possible. In consideration of these facts, we have decided, to waive our rules to the extent necessary to permit the use of omnidirectional transmitting and receiving antennas at any ITFS or MDS response station with an EIRP no greater than -6 dBW. This action, we believe, is appropriate and warranted in these circumstances and is fully consistent with our overall framework of encouraging expanding use of this spectrum while, at the same time, providing adequate protection from harmful interference to all systems. The use of omnidirectional antennas under the provisions of this waiver does not exempt the licensee from our existing requirement that interference calculations be based on the presumption that the response station utilizes a reference receiving antenna with minimum performance characteristics conforming to Figure I of 47 C.F.R. § 74.937(a). Users of omnidirectional response station receiving antennas will receive

[68] *Id.*

interference protection as if they were using a receiving antenna with the reference pattern and will not be protected from unwanted signal levels above those derived by use of this pattern.

b. Effect of Timing of Construction of ITFS Registered Receive Sites

35. Petitioners state that the advance notification and professional installation requirements should not apply with respect to ITFS receive sites built after the filing of the associated response station hub application. They argue that ITFS licensees now are on notice of the risk of BFO, and should be deploying downconverters better able to reject undesired signals.[69] We decline to adopt Petitioners' proposed exception. Interference protection rights within these services are based on a "first in time, first in right" philosophy. Because all ITFS registered receive sites will have been registered before the filing of any response station hub applications, these sites are previously-proposed and thus entitled to protection. Our decision here is consistent with other provisions in the new rules which require such protection.[70] We reiterate that the notification requirements will apply only to registered receive sites and those for which registration was applied for as of the date of adoption of the Two-Way Order.

c. Consent of ITFS Licensees

36. No party objects to allowing ITFS licensees to consent to waive the advance notification and professional installation requirements, and we grant Petitioners' proposal to permit such consents.[71] Indeed, the *Two-Way Order* specifically contemplates that consents will play a major role in the licensing of two-way MDS and ITFS facilities.[72] However, while individual ITFS licensees may forego their receipt of advance notification of response station activation, we agree with CTN that the professional installation requirement may be nullified only where all potentially affected ITFS licensees consent. Specifically, response stations operating above -6 dBW EIRP and no greater than +18 dBW EIRP need not be installed professionally so long as each and every ITFS licensee whose notification zone encompasses such responses stations consents in writing to non-professional installation of those response stations.[73]

d. Timing and Method of Advance Notification

37. Some parties propose shortening the notification period to enhance the competitive position of MDS operators and the Bay Area Consortium urges the Commission to dispense with the advance

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[69] Petitioners Petition. Petitioners also maintain that these requirements should not apply where the ITFS receive site is registered after the filing of the application for the neighboring hub. Because we have ceased registration of receive sites, this issue is moot.

[70] *See, e.g.,* 47 C.F.R. § 21.909(g)(8).

[71] *See* Petitioners Petition.

[72] *See, e.g., Two-Way Order*, 13 FCC Rcd at 19,148; § 21.913(a) of the new rules.

[73] The consent exception to the professional installation requirement does not apply in any circumstances where the response station is to operated exceeding +18 dBW EIRP.

notification rules altogether. CTN contends that the Bay Area Consortium's proposal, which would simply require hub applications to be served on potentially affected ITFS licensees, "is of little use" given that the hub application may be filed months or years before a response station capable of causing interference is activated and would not identify a specific, problematic response station.[74] Dallas County opposes shortening the notification period, claiming that the benefits of retaining 20 days notice outweigh any perceived competitive disadvantage.[75] Relatedly, Petitioners suggest that every response station hub application should be served on any ITFS licensee with a registered receive site in, or within 1960 feet of, the proposed RSA to assure that the activation notice is not the first time that an ITFS licensee learns of plans to deploy response stations in the vicinity of its registered receive sites.[76]

38. We will retain our advance notification requirement for response stations activated within 1960 feet of ITFS registered receive sites, except for those activations which fall into any of the above exceptions. We also will limit the term of this notification to one business day in advance of such activation. The main purpose of the advance notification requirement is to jump-start the BFO source identification process before BFO occurs, and we are persuaded that one business day is sufficient notice to achieve this purpose, while at the same time allaying the concerns expressed by some parties over the anti-competitive effects of a longer notification period. We also adopt Petitioners' suggestion for service of response station hub applications on non-co- and adjacent channel ITFS licensees.

39. While the *Two-Way Order* requires that advance notification be performed by certified mail, Petitioners request that an ITFS licensee be permitted to elect to receive it by electronic mail (e-mail) or fax.[77] We will permit such notification provided that the ITFS licensee consents in writing. Regardless of the method used, notification should be timed so that it is received by the ITFS licensee at least one day in advance of activation.

e. Content of Advance Notification

40. Petitioners propose that we limit the content of the notification to the ITFS receive site(s) potentially affected by the new response station, the hub(s) with which the response station may communicate, and the name and telephone number of a contact person.[78] Petitioners argue that the required content of the advance notification contains far more information than the ITFS licensee reasonably needs, and that this content thus should be reduced to protect proprietary and market sensitive information.[79] However, CTN argues that it is unlikely that the location of response station transmitters always could be hidden, and that no attempt has been made to show that a response station's physical location or operating specifications are in any way confidential.

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[74] CTN Opposition.

[75] Dallas County Opposition.

[76] Petitioners Petition.

[77] Petitioners Petition *See also* Region IV; C & W Petition.

[78] Petitioners Petition.

[79] *Id*.

41. We believe that the level of concern over predatory pricing by ITFS receiving notice, or by their lessees is unfounded. Reducing the advance notification period to one day minimizes any the potential for a competitor to utilize the information in the notification to the detriment of an MDS operator. Therefore, the interest in providing the information called for by our advance notification requirement to facilitate the identification of any BFO that may occur outweighs any of the concerns expressed regarding possible anti-competitive effects.[80]

42. In addition, we are not persuaded by Petitioners' argument that it is impossible for response station hub licensees to determine and supply in advance of response station activation certain technical characteristics of the response station. For one thing, some of those characteristics should be predetermined by virtue of the applied-for parameters of the RSA, region and class pertaining to the particular response station. We believe the activation process will require extensive coordination with the hub licensee or wireless cable operator, and from this the hub licensee will be able to derive the information required on the notification. Our adoption of rules requiring remote activation of response stations to prevent inadvertent activation of an improperly installed response transmitter also should facilitate recognition of the operating characteristics of the response station.

43. The Bay Area Consortium depicts the existing advance notification requirements as huge burdens for ITFS licensees on both sides of the notification. Not only would the provider of the notification be obligated to expend resources to prepare notifications, but the receiver also would be obligated to review potentially thousands of notifications.[81] However, we agree with those other parties who state that the need for interference protection outweighs the burdens. The fact that the notification zone extends only one-third of a mile from the registered receive site, coupled with the exceptions to the notification requirement that we have carved out here, should greatly limit the number of notifications. Furthermore, we adopt the proposal by Dallas County,[82] to require identification of the potentially affected registered ITFS receive sites and the response station hub(s) with which the newly activated response station may communicate because it will lessen the burden on parties reviewing the notification.

3. Technical Standards

a. Spectral Mask

44. Spike Technologies, Inc. ("Spike") asks the Commission to reconsider and amend the rules relating to the definition of the spectral mask applicable to digital emissions used at MDS and ITFS stations.[83] The spectral mask establishes the amount of attenuation which is required for the portions of the transmitted signal which fall beyond the upper and lower edges of the channel in use. Specifically, Spike argues that there is an inconsistency between the emission limits given in 47 C.F.R. §§ 21.908(a), (b), (d)

[80] If a sufficient record of anticompetitive behavior arising from such notifications is developed subsequently, we may revisit the required content of the notifications.

[81] Bay Area Consortium Petition.

[82] Dallas County Opposition.

[83] Spike Petition.

and the formulas in 47 C.F.R. § 21.908(e) which, according to Spike, "could be interpreted as being 18 dB more restrictive than intended...."[84] The text of Sections (a), (b) and (d) sets out the specific attenuations for out-of-band emissions relative to the "licensed average 6 MHz channel power level." Section 21.908(e) sets out two mathematical formulas that define two alternative measurement methodologies which can be used for determining compliance with Sections (a), (b) and (d). Spike contends that the formulaic attenuation schema is inconsistent with the relevant proposals in the *NPRM* and with the Commission's decisions in the *Digital Declaratory Ruling*.[85] Spike argues that their understanding of our requirements for suppression of out-of-band emissions in the *Digital Declaratory Ruling* and in the *NPRM* is that the magnitude of the out-of-band emissions (as measured in the appropriate resolution bandwidth) is to be compared to the magnitude of the total licensed average power within a 6 MHz channel, and that a ratio of these two magnitudes would yield the requisite suppression. Spike offers alternative formulas which, they say, present the correct methodologies for calculating the required out-of-band attenuations. In their opposition, Petitioners state that Spike fundamentally misunderstands how the text and formulas of the rule are to be correctly interpreted and that, in fact, there is no inconsistency between them and they are both correct. Petitioners argue that the rule text and formulas, as adopted, are completely consistent with the procedures used in connection with the emission tests which formed the basis for the *Digital Declaratory Order*; that Spike's alternative formulas are incorrect and inapplicable; and that implementation of the spectral mask rules in conformance with Spike's interpretation would result in a serious degradation of the MDS/ITFS band due to much greater levels of adjacent channel interference.

45. The text of 47 C.F.R. § 21.908 in both the *NPRM* and the *Two-Way Order* in this proceeding is a direct carryover of the text in the *Digital Declaratory Order*, where we said "Acceptable levels of out-of-band emissions shall reference the average transmitter output power."[86] Referencing out- of-band emissions to the measured average power within a portion of a 6 MHz channel (the resolution bandwidth) with uniform spectral density is an acceptable methodology and, most significantly, is the method used by the Petitioners, for the emissions test in support of our *Digital Declaratory Ruling*. We stated, by way of clarification, that "the relative power of out-of-band emissions shall be measured with 100 kHz resolution bandwidth."[87] The purpose of this statement was to highlight the fact that the resolution bandwidth of the measurement instrument must be taken into account when comparing the magnitudes of in-channel and out-of-channel power. In the tests conducted by the Petitioners, the most common resolution bandwidth used was 100 kHz, and, as the *Digital Declaratory Order* was based on these tests, that bandwidth was specified as the measurement standard. Subsequently, as a result of questions raised by comments to the *NPRM*, Petitioners proposed two generalized mathematical formulas which could be used to evaluate the relative levels of out-of-band emissions irrespective of the particular channel width and resolution bandwidth(s) involved. Those formulas were adopted by the Commission at 47 C.F.R. § 21.908(e) and they state, quantitatively, how the measurement of a spectral mask must be made in order to comply with the requirements of 47 C.F.R. § 21.908(a), (b) and (d). We agree with Petitioners that Spike is incorrect in their assertion that the text and formulas are inconsistent. The purpose of the text is as statement

[84] This issue also involves the ITFS emissions limits given in 47 C.F.R. §§ 74.936(c), (d), (f) and (h). Our consideration of the MDS spectral mask equally applies to the mask for ITFS stations.

[85] *Digital Declaratory Ruling,* 11 FCC Rcd at 18,858.

[86] *Id*.

[87] *Id.*

of *what* is to be measured, and the purpose of the formulas is to show the two alternative means for *how* the measurement is to be taken in order to produce consistent and correct results. Spikes's proposed alternative formulas are meant to compare the total amount of power in a 6 MHz wide channel against out-of-channel power measured within a 100 kHz bandwidth. The formulas which we adopted are meant to compare the power in a segment within the 6 MHz channel (for example, a 100 kHz segment) against the out-of-channel power measured within a bandwidth segment at the point of interest. The difference in the results of these two approaches amounts to approximately 18 dB for a resolution bandwidth of 100 kHz, *i.e.* 10 log(6 MHz/100 kHz), with Spike's formulas permitting out-of-channel power to be 18 dB greater than that permitted by the rule which we adopted. Thus, the interpretation suggested by Spike would result in a degradation of the emission mask by 18 dB and could result in unacceptably high levels of adjacent channel interference in the MDS/ITFS band.

46. Although we find Spike's interpretation of the formulas in 47 C.F.R. § 21.908(e) to be incorrect, we believe that Spike's misunderstanding of our measurement schema warrants a general clarification of the applicability of these formulas to the digital emissions already approved for MDS/ITFS and those that might be approved in the future.[88] Specifically, Spike states in their petition for reconsideration that the formulas "mistakenly reference the [spectral] mask to the "flat top" of the digital wave form." In fact, this reference to the "flat top" of the digital emission's wave form is correct and essential for establishing the correct portion of the signal to be measured when using relative power measurements for determination of the shape of the spectral mask. By "flat top," we are referring to that portion of the digital emission which falls at the center of the occupied bandwidth of the emission, *e.g.* at the center of a 6 MHz channel, at which center point a measurement of the power spectral density of the emission should yield, within a resolution bandwidth such as 100 kHz, a value which is not exceeded at any other point within the emission when measured within the same resolution bandwidth. For emissions such as 64-QAM, which have a relatively uniform power spectral density, a power measurement within a 100 kHz resolution bandwidth taken at the "flat top" or within any other 100 kHz segment that is not located proximate to the 6 MHz channel edge, should yield values which are essentially equal. However, for emissions such as QPSK and 4-QAM, this will not be true, as the "flat top" measurement value will exceed the value found from measurements taken at points between the center of the emission and the channel edges. This is true because QPSK has a "Sin X/X" power spectral density configuration, *i.e.*, the emission is "dome shaped," with more power concentrated near the center of the channel and less power concentrated towards the edges of the channel.

47. Thus, for emissions such as QPSK and 4-QAM, the "flat top" portion of the signal is the *only* point within the channel at which a correct comparison of the relative levels of in-band and out-of-band power can be taken. We would also emphasize that such emissions are constrained in terms of maximum permissible EIRP by the degree to which they are non-uniform. The interference protection rules which we proposed and adopted for digital emissions were premised on those emissions having uniform power spectral density, and thus, at any measurement point inside the occupied channel, presenting a uniform radiated power (EIRP) to which the 45 dB cochannel and 0 dB adjacent channel interference protection criteria could be applied. In this way, the licensed EIRP (*e.g.* 2000 watts) would be uniformly distributed across a 6 MHz channel (*e.g.* 333 watts/MHz) and no more EIRP would be present within the measurement resolution bandwidth at the channel center than would be present within the resolution bandwidth offset to a point removed from the center, *e.g.* within 1 MHz of the edge of the channel. For QPSK and similar emissions this will not be the case. For these emissions there will be, as discussed above, more power near the center

[88] The confusion over this issue may stem from the reference to the phrase "licensed average 6 MHz channel power level" in Sections 21.908 and 74.936 of our rules. We will clarify these rules accordingly.

of the emission than near its edges. The result of this concentration of power is that the center portion of the emission presents a greater level of potentially interfering EIRP than do the portions away from the center. For equal EIRP's 64, a QPSK signal will have more interfering power near its channel center than will a uniform emission, such as over a 6 MHz channel QAM, a result which would be contrary to the premises of our interference protection standards especially with regard to subchanneling, which is permitted on uniform spectral density. We therefore caution applicants and licensees that the transmitter power limits in 47 C.F.R. §§ 21.904 and 74.935 are maximum values which, as applied to digital emissions, are permissible only when those emissions have uniform power spectral density. For other emissions, such as QPSK and 4-QAM, the maximum permissible EIRP value will be lower, dependant on the actual power spectral distribution of the signal. Specifically, for non-uniform emissions, the maximum permissible total channel power is that value which results in a "flat top" power level no greater than the "flat top" power level which would be produced by a uniform digital emission using the same channel width. For purposes of measuring "flat top" power levels for non-uniform emissions within a 6 MHz channel, we will assume the use of a 100 kHz resolution bandwidth in a 6 MHz channel. We have amended Sections 21.904 and 74.935 of our Rules to clarify these power reduction requirements.

b. Frequency Tolerance

48. Spike and Cisco Systems, Inc. ("Cisco") object to the imposition of a +/- 1 kHz frequency tolerance requirement on MDS and ITFS primary and high-power booster stations which utilize digital modulations other than VSB.[89] These parties argue that frequency tolerance is not relevant to non-VSB digital modulations because these emissions do not have a carrier frequency, and that imposition of such a requirement will significantly increase the cost of transmitters at primary and high-power booster stations because the frequency determining circuitry in these units will require the use of an ovenized crystal oscillator, rather than a simpler and much less expensive temperature-compensated crystal oscillator. Cisco asserts that the required frequency tolerance cannot be justified as a means of facilitating frequency-offset amelioration of cochannel interference because interference caused by carrierless digital emissions is not amenable to such a remedy. Spike argues that the frequency tolerance requirement adopted in the *Two-Way Order* is inconsistent with our actions in both the *Digital Declaratory Ruling* and the *NPRM* in this proceeding, and that "not a single commenter in the proceeding advocated the imposition of frequency tolerance standards on non-VSB digital transmissions." Cisco suggests, as an alternative to the +/- 1 kHz requirement, that the Commission amend its rules to require a tolerance of 0.001% for non-VSB digital emissions, arguing that this looser standard will not adversely affect adjacent channel interference protection requirements because all transmitters will still be required to comply with the Commission's spectral mask regulations for digital emissions. Petitioners responded to these parties, saying that frequency tolerance is important for all digital emissions and arguing that Spike is incorrect in its assertion that the +/- 1 kHz requirement was not supported in the comments to the *NPRM*, pointing out that Petitioners themselves both recommended and supported this requirement consistently in their filings in connection with the *Digital Declaratory Ruling*, the *NPRM*, and the *Two-Way Order*.[90] While supporting retention of a tolerance requirement, Petitioners also stated that they would not be opposed to a relaxation of the requirement "to levels that can be achieved without using ovenized crystal oscillators."[91]

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[89] Petitions of Spike and Cisco.

[90] Petitioners Opposition.

[91] *Id.*

49. With few exceptions, the Commission has routinely imposed frequency tolerance requirements on transmitters used in all services, including MDS and ITFS. This requirement has been imposed as a means for assuring that the signal from the transmitter will stay within its assigned channel or bandwidth and, using frequency offset techniques, as a means for ameliorating some instances of cochannel interference between analog stations. Frequency tolerance is specified in terms of the stability of the "carrier" signal generated by the transmitter, and is typically expressed in absolute terms, such as +/- 1 kHz, or in relative terms, such as 0.001%. For emissions which do not involve the transmission of a carrier as part of their modulated output, such as the digital emission QAM, the relevance of frequency tolerance is significantly diminished. In this proceeding, the Commission proposed, and subsequently adopted, rules applying the pre-existing +/- 1 kHz analog emission tolerance requirement to all digital emissions, although low-power booster stations and all response stations using digital emissions were exempted from the requirement, based on their limited potential for causing interference which might result from a lack of frequency stability.[92] Our rationale for continuing to apply a tolerance standard to digital emissions used at primary and high-power booster stations was that "there is a much more significant potential interference impact and we believe that requiring the emissions from these stations to be held steady within their assigned channels is much more important."[93] Upon reconsideration, we find that this concern remains valid and should continue to be a basis for imposing a tolerance requirement on these stations. However, we agree with Cisco that amending the requirement to 0.001% would be appropriate, as this would not increase the potential for interference from these stations and would reduce the cost of manufacturing the oscillators used in these transmitters very significantly. In absolute terms, a 0.001% tolerance would amount to 26 kHz for a transmitter operating on a frequency of 2600 MHz. Within a 6 MHz wide MDS or ITFS channel, a variation of 26 kHz is insignificant and should have no impact on the interference environment. We are applying this rule amendment to all currently-approved digital emissions for MDS and ITFS stations.

c. Other Technical Considerations

50. CTN requests that the Commission reconsider its references in the rules pertaining to interference calculation requirements with respect to use of the terms "free space" and "unobstructed path." CTN notes, and we agree, that there is an inconsistent use of these terms in the rules adopted in the *Two-Way Order* and in Appendix D attached thereto. CTN suggests that these terms be replaced by the term "terrain sensitive methodology," which would include both obstructed and unobstructed paths. We agree that this terminology is superior to that now used and we are therefore amending 47 C.F.R. § 21.902 and § 74.903 accordingly. This will reflect the fact that we have permitted the inclusion of terrain factors in interference calculations for MDS and ITFS systems and will continue to do so. When prepackaged terrain-sensitive software is used in which keys can be set for such factors as ground reflection and clutter environment, and/or when path-specific factors such as ground conductivity or dielectric constant can be entered, this information must be clearly stated within the interference calculation submission attached to the application(s) being filed so that it is available for independent verification. We are also amending our application processing procedures for MDS and ITFS licenses to regard changes in antenna elevation pattern, as well as changes in antenna azimuth pattern, as falling within the meaning of the phrase "in any direction" found in 47 C.F.R. §§ 21.23(c)(1)(vi), 21.42(c)(8), and 74.911(a)(1). This recognizes the valid concern raised by CTN that a modification to the elevation pattern of an MDS or ITFS antenna, as a result of electrical (or mechanical) beam tilt or array reconfiguration, can be a potential source of interference to

[92] *See* 47 C.F.R. § 21.101(a) and § 74.961(a))

[93] *Two-Way Order*, 13 FCC Rcd at 19,127.

neighboring stations even though the pattern of the antenna, as viewed in terms of its horizontal directivity, may not have changed.

51. CTN also requests a clarification of 47 C.F.R. §§ 21.909(o) and 74.939(q) with respect to what signal propagation model(s) are permissible for use in connection with Appendix D. CTN argues that Appendix D, which sets out in detail the methodology for calculating interference for response and hub stations, and which includes a lengthy discussion of the Epstein-Peterson signal propagation model, is ambiguous as to whether propagation models other than Epstein-Peterson may be used for Appendix D calculations. CTN states that we "should resolve this ambiguity in a way that does not favor a particular model."[94] The specific language which the Commission used in Appendix D was as follows: "When analyzing interference from response stations to other systems and from other systems to response station hubs, a propagation model shall be used that takes into account the effects of terrain and certain other factors."[95] The Commission then went on, at length, to describe the propagation model (*i.e.* Epstein-Peterson) which is to be used. Responding to concerns paralleling those now raised by CTN, we stated our intention of requiring uniformity in response and hub station interference calculations, saying "Nor do we agree that applicants should be free to choose any methodology they wish for making interference calculations, as this would drastically slow the evaluation of applications and almost certainly result in many Petitions to Deny, as licensees and applicants struggled to understand the differing and potentially incompatible assumptions and calculations incorporated into the various methodologies."[96] Inasmuch as the propagation calculations are an integral and indispensable part of the interference calculation methodology of Appendix D, we reject CTN's contention that there is any ambiguity in our position, and we remain unable to discern any benefit to the flexibility sought by CTN which would offset the increased complexity of requiring applicants and licensees to be conversant with multiple propagation calculation schemes if they wished to be able to review the applications filed by neighboring systems which could potentially be sources of interference. It should be noted, however, that mandatory use of the Epstein-Peterson model applies only to calculations performed in accordance with the requirements of Appendix D, and does not apply to calculations not involving two-way cellularized systems of response and hub stations. Those calculations may continue to be performed using any appropriate terrain-sensitive model.

52. With respect to another portion of Appendix D, which deals with the collection of information to be submitted at the time of filing of an application, CTN requests modifications of and additions to certain data fields.[97] Specifically, CTN asks that fields be added for electrical beam tilt and for the direction (azimuth) of mechanical beam tilt of the station antenna, as well as replacing the term "azimuth of main lobe" with the term "azimuth of main lobe or azimuth of symmetry."[98] CTN also requests that the specification of antenna elevation patterns be from -90 degrees to +90 degrees, rather than from 0 to 359 degrees as now required. We agree that these modifications and additions are justified and Appendix D is

[94] CTN Petition.

[95] *Two-Way Order*, 13 FCC Rcd at 19,265.

[96] *Id.* at 19,140.

[97] CTN Petition.

[98] *Id.*

being amended appropriately. The fields which CTN requests as additions were inadvertently omitted in the drafting of Appendix D and are clearly necessary elements in the specification of antenna characteristics at MDS and ITFS stations. Adding the term "azimuth of symmetry" will account for multi-lobed symmetrical antennas which do not have a single "azimuth of main lobe." Antenna elevation patterns are typically specified as suggested by CTN, with angles below the horizon defined as positive numbers, *e.g.* a "depression angle of 2 degrees" would be shown as +02. With respect to Appendix D as a whole, CTN requests that the Commission provide sample interference calculations which could be used for future reference for similar calculations necessary in connection with the filing of applications and the evaluation of applications filed by competing parties. We believe this is unnecessary because, although the procedures set out in Appendix D are complex, the complexity stems primarily from the number of calculations which must be undertaken, rather than from any inherent complexity in the calculations themselves.

D. Proposals Specifically Regarding Use of 125 kHz Channels

53. In the *Two-Way Order,* we adopted rules in accordance with the most flexible framework proposed in the *NPRM* for use of the 125 kHz channels, which included *inter alia* redesignating these channels as the I Channels.[99] On reconsideration, CTN requests that the Commission permit applications for "traditional return-path use" of I channels to be filed under the streamlined application processing rules, as are applications for downstream use of I channels.[100] We grant this request as consistent with our decision to broaden the field of MDS and ITFS applications subject to streamlined processing and specify that any application to use I channels for upstream transmissions should be filed on FCC Form 331 and included in our new streamlined application processing system.

54. In addition, CTN contends that our rules may have the effect of limiting the flexibility available to ITFS licensees to provide two-way analog services.[101] CTN explains that for ITFS stations choosing to continue analog operations the I channels offer the only opportunity to provide response transmissions in their networks. CTN argues that allowing I channels to be used either for upstream or downstream transmissions complicates the interference environment for any analog I channel use and the ability of an ITFS licensee to use an I channel for analog response transmissions may be lost. Accordingly, CTN requests that the Commission modify 47 C.F.R. § 74.939(l) to make all downstream use of the I channels secondary to upstream use.

55. In response, Petitioners counter that we should not adopt rules that would reduce downstream operations on the I channels to secondary status.[102] Petitioners contend that adoption of CTN's current proposal would frustrate the deployment of downstream use of the I channels because licensees would be reluctant to develop point-to-multipoint facilities if they could be required to cease operations at a moment's notice in order to protect a newcomer using I channels for upstream transmissions. The result, Petitioners warn, would be to undermining the "more efficient use of the spectrum" envisioned by the *Two-Way Order.*

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[99] 13 FCC Rcd at 19,143-46. The I Channels compose the bulk of the 2686-2690 MHz band.

[100] CTN Petition.

[101] *Id*.

[102] Petitioners Opposition.

56. We disagree with CTN that upstream uses of I channels should be automatically primary to point-to-multipoint uses. Contrary to CTN's assertions,[103] we believe that retaining the flexibility that we established in the *Two-Way Order* for I channels usage actually will enhance the value of the I channels, most of which have lain fallow in an analog environment. In the digital two-way environment, where channels of varying bandwidth will be utilized, we believe that the I channels will provide valuable spectrum to an operator who uses them either for downstream or upstream transmissions. If anything, adopting CTN's proposal would undermine the value of the I Channels, because it would detract from the certainty that licensees and operators enjoy in the interference protection rights otherwise safeguarded by our rules. MDS and ITFS licensees long have had the ability to initiate response transmissions; we emphasize that those who do so before the initial one-week window for two-way applications have rights as previous filers. Moreover, ITFS licensees who seek to establish new analog I channels response stations subsequent to our opening of the initial window will have the same time-based rights as other contemporaneous applicants, and also may swap channels with licensees employing digital transmissions, or lease to others employing digital transmissions, to assist in avoiding interference conflicts.[104]

E. Issues Primarily Involving ITFS

1. Channel Swapping and Shifting

57. In the *Two-Way Order*, we amended our rules to permit ITFS licensees to fulfill their educational usage requirements on other channels within the same wireless cable system, regardless of whether these channels are licensed to an MDS or ITFS entity ("channel shifting"), and to allow ITFS licensees to trade some or all of their licensed spectrum for spectrum licensed to MDS entities ("channel swapping").[105] We found that these approaches would maximize flexibility by greatly assisting operators in assembling the contiguous frequency blocks which are essential to a two-way architecture. While permitting any intra-ITFS channel swap, we specified that channel shifting and channel swapping would be available only to licensees utilizing digital transmissions, leasing excess capacity to an operator which utilizes digital transmissions, or swapping channels with a licensee which utilizes digital transmissions.

58. Some parties have asked us to permit channel shifting by ITFS licensees that solely utilize analog transmissions and do not lease to an operator employing digital technology, and to permit channel

[103] CTN Petition.

[104] C & W submits that the new rules implementing the regulation of 125 kHz channels are insufficiently clear as to who may be the applicant for use of these frequencies, and requests that the Commission revise these rules to clarify that only the current licensee will be permitted to file for use of these channels. C & W Petition. Section 74.939(j) of the new rules provides that "[t]he 125 kHz channels listed in the following table shall be assigned to the licensees of MDS and ITFS stations . . . in accordance with the table." In addition, Section 21.909(a), 21.949(a) and 74.949(a) of the new rules all specifically refer to § 74.939(j), which is part of the rule otherwise governing ITFS response stations. While we believe that our rules are sufficiently clear, we emphasize here that the licensee of the associated main station as delineated in the table in Section 74.939(j), or the licensee with whom the originally-associated licensee has swapped 125 kHz channels, may apply for use of these frequencies.

[105] *Two-Way Order,* 13 FCC Rcd at 19,162-71.

swapping between ITFS and MDS licensees where both licensees only utilize analog transmissions and do not lease to a lessee that employs digital technology.[106] Those parties claim there is no reason to treat digital and analog systems differently in this respect. We agree with these parties and find that permitting such channel shifting and channel swapping will further maximize flexibility of the services and thereby benefit the public. Therefore, we will permit channel shifting and channel swapping among MDS and ITFS licensees without regard to whether the entities at issue employ digital technology or lease to a lessee using digital technology.

2. Grandfathering of Excess Capacity Lease Provisions

59. In the *Two-Way Order*, we generally grandfathered preexisting ITFS excess capacity lease agreements for their duration in order to minimize disruptions to existing relationships caused by the need to comply with our new rules.[107] However, this protection did not apply to leases entered into, renewed, or extended after March 31, 1997 because parties to such leases would have had imputed notice of the impending rule changes following the release of our Public Notice announcing the filing of the petition for rulemaking which initiated this proceeding.[108]

60. CTN states that many excess capacity leases adopted under our former 10-year term limitation contain a provision that automatically extends the initial term of the lease to the maximum allowed in the event that the Commission permits longer terms, so that some of these leases were extended automatically due to the new 15lyear lease term that we approved in the *Two-Way Order*.[109] CTN is concerned that a literal reading of the *Two-Way Order* would treat these leases as extended after March 31, 1997 and require them to be brought into compliance with all of the rule changes governing excess capacity leases, even though they may have been negotiated years before the two-way rules were proposed. In the *Two-Way Order,* we did not intend to force a mass wave of lease renegotiations where the parties had no notice of the forthcoming two-way rules at the time they entered into the leases. Because many of these leases may have been negotiated prior to March 31, 1997, the trigger date for when we impute parties to have had notice that two-way operations were contemplated for ITFS and MDS, such leases should retain grandfathered status in the particular circumstances depicted by CTN. Extending the grandfathered status of leases in these circumstances by five additional years allows the parties to continue to realize the benefits of the bargains that they originally negotiated at a time when two-way operations were not factored into the equation, yet ensures that successor leases will comply with the rules that we adopted in the *Two-Way Order* within a reasonable time frame.

61. Petitioners ask that the Commission clarify that a lease that is otherwise grandfathered does not lose that status because it includes a provision under which the lease is renewed automatically after

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[106] *See* Region IV Petition; C & W Petition; UT Television Petition.

[107] *Two-Way Order*, 13 FCC Rcd at 19,181-83.

[108] "Pleading Cycle Established for Comments on Petition for Rulemaking to Amend Parts 21 and 74 of the Commission's Rules to Enhance the Ability of Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions," *Public Notice*, RM-9060, DA 97-637 (rel. March 31, 1997).

[109] *See Two-Way Order,* 13 FCC Rcd at 19,183-84.

March 31, 1997.[110] Petitioners' request theoretically could yield a result where a lease may avoid compliance with the new rules into perpetuity. Because Petitioners' request thus controverts the intent of the *Two-Way Order*'s admonition that leases renewed after March 31, 1997 be brought into compliance with the rules that we adopted in the *Two-Way Order*, we deny Petitioners' requested clarification.[111]

3. Assignment of Excess Capacity Leases

62. BellSouth and other parties have asked us to reconsider our decision not to permit ITFS excess-capacity lease terms that would require assumption of the lease obligations by any license assignee or transferee. CTN, among others, opposes any change arguing that it would create an undue burden on licensees. We agree with CTN that any such lease provisions would place an unreasonable impediment on the assignment or transfer of the ITFS facility.[112] We believe that this rationale applies, because banning such provisions enhances the ITFS licensee's flexibility in finding a buyer should it decide to sell. We note that we do permit restrictions on excess-capacity leases that would require ITFS licensees who are not seeking a buyer, but who simply wish to surrender their licenses, to permit the lessee six months to locate an acceptable buyer.[113]

F. Booster Stations

1. High-Power Booster Operations

63. Petitioners state that the Commission should amend 47 C.F.R. § 21.913(b) and § 74.985(b) of the new rules to eliminate the requirements that only a response station hub licensee, conditional licensee or applicant may hold a high-power booster license, and that high-power boosters may operate only utilizing digital modulation. Petitioners maintain that there is no indication in the *Two-Way Order* that these restrictions were intended and they appear to be contrary to the general theme of licensee flexibility. Furthermore, according to Petitioners, there still is a demand for high-power analog booster stations to expand the coverage area of analog downstream video transmission facilities.[114] We agree and we amend

[110] Petitioners Opposition.

[111] In the *Two-Way Order*, we required that any lease already having been entered into, renewed, or extended after March 31, 1997 be brought into compliance with the rules and policies adopted in the *Two-Way Order* within 75 days of *Federal Register* notice of the *Two-Way Order*. *Two-Way Order*, 13 FCC Rcd at 19,182 n.354. Upon further consideration subsequent to our adoption of the *Two-Way Order*, we realized that this edict could lead to the unduly burdensome result of parties having to revisit their leases twice, depending on whatever rule and policy changes that we were to adopt here. Balancing the interests of avoiding unnecessarily burdensome mandates while providing a date certain for the compliance of such leases with the rules and policies that we adopted in the *Two-Way Order*, as modified here, we extend the compliance date for any lease falling into this category until 15 days after *Federal Register* notice of the effectiveness of all of the rules adopted in this proceeding, including those subject to OMB approval.

[112] *See Central Cass Public School District*, 10 FCC Rcd at 3168.

[113] *Two-Way Order*, 13 FCC Rcd at 19,185.

[114] Petitioners Petition. *See also* C & W Petition.

our Rules to make clear that high-power boosters may utilize digital and/or analog modulation, and that two-way operations are not a prerequisite for licensing a high-power booster.

2. Treatment of Currently-Licensed Boosters

64. C & W requests that the Commission clarify that it intended that currently licensed booster stations will be able to operate pursuant to the new two-way rules upon their enactment. C & W reasons that to find differently would only result in creating the unnecessary administrative burden of requiring booster licensees to re-file for their currently authorized stations under the new rules, and may lead to an inequity to ongoing operations if they result in a mutual interference situation with another station.[115] Petitioners, on the other hand, ask that the Commission make clear that boosters licensed under the old regime are not entitled to protection within a booster service area (BSA) at this juncture. Instead, they propose that in order to secure a BSA, a booster licensee should be required to submit a notification during the initial filing window which sets forth the information specified in Sections 21.913(b)(4) - (6) or 74.985(b)(2), (3) and (6) of the new rules, relating to high-power boosters, or Sections 21.913(e)(1) - (3) or 74.985(e)(1) - (3) of the new rules, relating to low-power boosters, as appropriate. Petitioners add that a BSA delineated during the initial window would not be entitled to protection *vis-à-vis* applications proposed during the window, but would be entitled to protection against subsequent proposals.[116]

65. We generally support C & W's request, except we find some merit in Petitioners' counter-request with respect to interference protection rights. Specifically, we agree with Petitioners that currently-licensed high-power boosters do not automatically receive BSA protection upon the effective date of the high-power booster interference protection rules, and we concur with Petitioners' proposed procedures for establishing high-power booster BSAs and with their recitation of the relative interference protection rights accorded to such BSAs. We disagree with Petitioners, however, that these same procedures and rights apply to the establishment of low-power BSAs, because our Rules, both current and impending, entail that notification of the construction of a low-power booster is not relegated to a filing window nor subject to our new streamlined application processing procedures. Therefore, any notification of the construction of a low-power booster, that is submitted following the effective date of new §§ 21.913(e) and 74.985(e) of our rules, may establish a BSA for the low-power booster station that is covered by the notification.[117]

66. While we agree that currently-licensed high-power boosters may not establish BSAs until the initial filing window, it does not follow that they are left completely unprotected against subsequent applications, including those filed in the initial window; after all, most still will benefit at least to some degree from the protection accorded the psa or Basic Trading Area ("BTA") in which they are located.

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[115] C & W Petition.

[116] Petitioners Opposition.

[117] Consistent with Petitioners' proposed procedures, licensees of currently operating low-power boosters may, at any time following the effective date of Sections 21.913(e) and 74.985(e) of the new rules, submit notifications containing the information specified in Sections 21.913(e)(1) - (3), (5)(iv) or 74.985(e)(1) -(3), (5)(iv) of the new rules, as appropriate, in order to establish BSAs for these low-power boosters. All low-power booster BSAs established after the effective date of Sections 21.913(e) and 74.985(e) of the new rules, regardless of whether the underlying stations are currently licensed or are to be newly-installed, are entitled to protection relative to subsequently filed applications and subsequent notifications.

Nevertheless, we anticipate that current licensees of high-power boosters will seek to establish BSAs for these boosters, and the following procedures will apply when they attempt to do so: The booster licensee should submit a notification of establishment of a BSA, on FCC Form 331, to the Commission in Washington, DC. The licensee also should submit contemporaneously to the Commission's duplication contractor the information called for in Sections 21.913(b)(4) - (6) or 74.985(b)(2), (3) and (6) of the new rules, as appropriate, along with a copy of the FCC Form 331 submitted to the Commission.[118] We further specify that current high-power booster station licensees may seek to secure BSAs for their stations either during the initial filing window or in the subsequent rolling, one-day filing window, and that these same procedures apply regardless of when the relevant notifications are submitted. Likewise, the same relative interference protection rights attach to newly-established BSAs regardless of whether the relevant notifications are submitted during the initial window or the subsequent rolling window, and these rights are consistent with Petitioners' pronouncements on them. Finally, we stress that while currently licensed high-power boosters may not have BSAs established until the initial filing window at the earliest, licensees of these stations are not responsible for demonstrating anew, during the process of attempting to secure BSAs, interference protection to neighboring stations.

3. Booster Licensees

67. Several parties[119] have objected to our decision to require that licenses for all downstream booster stations and any associated return paths that employ ITFS licensed channels be held by the ITFS licensee.[120] These parties say that it would create greater system flexibility and administrative efficiency to permit a single party to hold all booster station licenses throughout a service area. Other parties oppose any change in our decision because to do so would "undermine the educational nature of the ITFS service and result in a *de facto* reallocation of spectrum for purely commercial use."[121] We believe that we can address both of these concerns by permitting ITFS excess-capacity lessees to apply for booster stations on ITFS frequencies with two conditions: (1) the lessee must obtain the written consent of the main station licensee before applying for such a booster, and (2) the lease must contain provisions that require the lessee to offer to assign the booster licenses to the main station licensee for purely nominal consideration upon termination of the lease. This will enable ITFS excess-capacity lessees to benefit from the flexibility and efficiencies of having all of the booster licenses for their systems held by a single entity, but not cause ITFS licensees to risk permanently losing part of their licensed spectrum.

IV. *DIGITAL DECLARATORY RULING*

A. Introduction

68. The Commission also has before it petitions for clarification of the MDS and ITFS *Digital*

[118] The materials submitted to the Commission's copy contractor also must include a certification that they were served upon potentially affected parties pursuant to Section 21.913(b)(7) or Section 74.985(b)(7), as appropriate, and as if the notifying licensee was filing an application for a new high-power booster station.

[119] *See*, *e.g.*, Petitions of BellSouth and Petitioners.

[120] *Two-Way Order*, 13 FCC Rcd at 19,119.

[121] CTN Opposition.

Declaratory Ruling. In the *Digital Declaratory Ruling*, the Commission interpreted its rules and policies to allow the utilization of digital transmissions by MDS and ITFS licensees on a non-interference basis, adopting an interim approach to the use of QAM or VSB digital modulation upon application by individual MDS or ITFS entities. Petitions for clarification of the *Digital Declaratory Ruling* were filed by WCA, BellSouth, and NIA. A grouping of wireless cable operators and investors (Commenters)[122] and WCA separately submitted comments in support of BellSouth's petition. The Foundation filed comments which support BellSouth's petition and which support in part and oppose in part Commenters' positions. We will grant those aspects of the petitions and comments related to clarification and expansion of the limited exception with respect to grandfathering of interference within the protected service areas of ITFS stations and MDS incumbent stations. However, we refrain at this time from addressing the rights of licensees when digital operation by them and/or neighboring cochannel licensees forcloses the opportunity to use frequency offset techniques to enhance interference protection, and we deny as moot NIA's proposal regarding recapture rights of ITFS licensees.

B. Limited Exception to the Protected Service Area Definition for Modifications

69. Paragraphs 23 and 24 of the *Digital Declaratory Ruling* describe a limited exception to the 56.33 km (35 mile) psas of MDS "incumbent" stations, and apply this exception to modification applications of MDS incumbents and "ITFS incumbents" seeking use of digital technology.[123] This limited exception was initially set out in the *Second Wireless Cable Reconsideration Order*, where we expanded the psa of MDS stations. Pursuant to the limited exception, a modifying applicant can secure a waiver of the 35 mile psa definition and maintain "grandfathered" interference where six conditions are met: (1) the modification application is filed after the effective date (September 18, 1995) of the expanded 35 mile psa; (2) the station being modified was authorized or proposed on or before the effective date of the expanded psa; (3) the station being interfered with (the desired station)[124] was authorized or proposed on or before the effective date of the expanded psa; (4) the predicted interference does not occur within the former 710 square mile psa of the desired station; (5) the modification does not increase the size of the area suffering harmful interference; and (6) the modification does not result in any new interference to the desired station's psa.[125] In describing this limited exception in paragraph 23 of the *Digital Declaratory Ruling*, we stated that "there would be situations in which two expanded service areas would overlap. Accordingly, we adopted a limited exception to the 35 mile psa definition to govern modification applications of MDS incumbents, where two psas overlap."

70. As urged by petitioning parties, we clarify that the psa overlap stipulation in paragraph 23 of the *Digital Declaratory Ruling* was intended merely as an example of a situation where waivers pursuant

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[122] The Commenters included: Cross Country Wireless, Inc., Pacific Telesis Enterprises, CAI Wireless Systems, Inc. (CAI), CS Wireless Systems, Inc., People's Choice TV Corporation, National Wireless Holdings, Inc., Bell Atlantic Corporation, and NYNEX.

[123] "Incumbent" stations are those authorized or proposed on or before September 18, 1995, and are entitled as of that date to protected service areas of 35 miles.

[124] We hereinafter refer to the station seeking to modify its own parameters as the "undesired station," and to the station potentially affected by these proposed modifications as the "desired station."

[125] *Second Wireless Cable Reconsideration Order*, 10 FCC Rcd at 7083-84.

to the limited exception would be granted. We also are persuaded that we may expand the exception, for *any* modification not resulting in any new interference to the desired station's psa nor increasing the size of the area suffering harmful interference to effectively nullify the fourth condition of the exception and allow preexisting interference even within the former 710 square mile psa which pertained prior to September 18, 1995.[126] Petitioning parties and the Commenters argue that this extension is important because without it licensees would face business or operational impediments when seeking to implement digital operations or to make changes to digital systems that do not have an adverse impact on the existing interference environment.[127] Staking its position on the implicit or explicit agreement of the non-modifying licensee to accept interference from a previously proposed station, WCA adds that "[a]s a matter of course," the Commission's staff has authorized subsequent modifications to previously proposed stations even if the modifications do not eliminate the interference within the pre-expansion psa or at registered ITFS receive sites, so long as the modifications did not increase interference.[128] In establishing the fourth condition of the exception, we were primarily concerned that "[n]o modification will be allowed which would cause existing stations to adapt to additional interference."[129] As discussed in the *Second Wireless Cable Reconsideration Order*, the limited exception set out there was designed to be similar to the approach which the Commission utilized in 1984 in adopting the former 710 square mile psa: that "it would not be useful to disturb existing situations" where MDS operators had adapted to interference.[130]

71. Like the Commenters, the Foundation seeks to expand the exception further, albeit in a different way, to include applications for digital emission designators where the modifying station or the desired station was proposed *after* the effective date of the expanded psa. The Foundation particularly discusses ITFS circumstances which, it argues, warrant expansion of the exception. Now that we have granted all ITFS licensees psas, expanding the exception per the Foundation's request brings the policies and procedures for ITFS stations into conformance with those for incumbent stations with similar interference protection requirements, thus enhancing the compatibility for wireless cable operators who use ITFS and MDS channels.[131] Furthermore, as discussed above, the exception is designed primarily to at least maintain the interference status quo, so retaining the safeguards against interference in new areas will ensure that the

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[126] For a station using an omnidirectional antenna, the former protected service area was a 24.1 km (15 mile) radius from the protected station's transmitter site.

[127] *See* Engineering Statement of T. Lauriston Hardin, P.E. in Support of Petition for Clarification of BellSouth Wireless Cable, Inc., at 2.; Commenters Comments at 5.

[128] WCA Comments at 2 n.5, 3-4.

[129] *Second Wireless Cable Reconsideration Order*, 10 FCC Rcd at 7084.

[130] *Amendment of Parts 21, 74 and 94 of the Commission's Rules and Regulations with regard to the technical requirements applicable to the Multipoint Distribution Service, the Instructional Fixed Television Service and the Private Operational-Fixed Microwave Service (OFS)*, 98 FCC 2d 68, 111 (1984) (hereinafter *MDS Technical Order*); *see Second Wireless Cable Reconsideration Order*, 10 FCC Rcd at 7084.

[131] *See Digital Declaratory Ruling,* 11 FCC Rcd at 18,853-54.

modification does not harm the desired station, no matter when the modifying station or the desired station was originally proposed. We believe that these rationales apply regardless of whether or not the proposed modification is for digital transmissions. Therefore, we further extend the exception in the manner prompted by the Foundation, but as it relates to *any* modification application, not merely digital modification applications.

72. Thus, the limited exception set out in paragraphs 24-25 of the *Second Wireless Cable Reconsideration Order* and paragraphs 23-24 of the *Digital Declaratory Ruling* is modified accordingly, to permit any MDS or ITFS station modification predicted to cause interference to any portion of the desired station's 35 mile psa, or to any of its receive sites that are registered previously,[132] no matter when the modifying station or the desired station was originally proposed, so long as such station modification is filed after the effective date of the expanded psa and adheres to the stricture that it would cause no new interference to the desired station. We further clarify, on our own motion, that the exception also applies to grandfathered adjacent channel interference, defined with respect to the predicted 0 dB desired-to-undesired (D/U) signal ratio contour line, even though the *Second Wireless Cable Reconsideration Order* only makes explicit reference to the cochannel 45 dB D/U standard.[133] We reiterate that the limited exception applies only to interference already existing between the modifying station and desired station *as to each other*.[134]

C. Rights of Licensees Where Digital Operation Affects Use of Frequency Offset

73. Frequency offset is an interference amelioration technique in which the carrier frequencies of two cochannel signals are adjusted so that they are not identical, thus reducing the potential for interference to either signal caused by the other. Frequency offset techniques are generally of no utility in reducing interference caused by a station employing digital modulation,[135] though we expressed our belief in the *Digital Declaratory Ruling* that there may be some utility in frequency offset operation involving "pilot" carriers in VSB digital transmissions to prevent interference to analog stations on lower adjacent channels.[136]

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[132] Just as we also applied this exception to ITFS incumbent licensees in the *Digital Declaratory Ruling*, specifically grandfathering existing interference to ITFS receive sites will further our goal of enhancing the compatibility of ITFS and MDS policies and procedures for wireless cable operators which use ITFS and MDS channels. *See Digital Declaratory Ruling*, 11 FCC Rcd at 18,853-54.

[133] *See Second Wireless Cable Reconsideration Order*, 10 FCC Rcd at 7083-84.

[134] *See id*. at 7084; *see also MDS Technical Order*, 98 FCC 2d at 112-13. In its petition for reconsideration and clarification of the *Two-Way Order*, C & W asserts that clarification is needed regarding how grandfathered interference rights of incumbent stations relate to the filing of two-way applications. C & W notes the limited exception described above, and requests that the Commission declare that this exception will apply to interference analyses submitted by response station hub applicants regarding upstream transmissions from response stations. C & W Petition at 8. We agree that this exception applies with respect to upstream transmissions, where all of the criteria from the exception, as clarified above, are met.

[135] *See Digital Declaratory Ruling*, 11 FCC Rcd at 18,856 n.53.

[136] *Id.* at 18,859.

74. Petitioning parties argue that a station using frequency offset which seeks to convert to digital modulation should only be required to seek consent from the other offset station when there is a written, binding and bilateral agreement between the two stations to employ frequency offset. They state that currently, such an agreement is required prior to the grant of an application that fails to meet the 45 dB D/U standard with respect to another station.[137] Petitioning parties add that because the parties voluntarily surrendered their rights in the agreement, only in this instance, pursuant to the agreement, is there a rational basis for allowing a licensee or applicant to bar another station from converting to digital modulation.[138] Petitioning parties specify two scenarios where the desired offset station should not be able to bar the digital modification of the applicant station, because, they claim, the subsequently proposed desired station in effect accepted whatever cochannel interference it might receive from the other station.[139] In the first scenario, ITFS stations were authorized based upon interference protection ratios as low as 28 dB, coupled with the applicant's unilateral representation that it would use frequency offset.[140] Petitioning parties contend that in this instance, the stations were authorized on an offset basis to protect the reception of the offset incumbent stations. In the second scenario, MDS and ITFS stations unilaterally proposed offset in order to protect their own reception.[141] Conversely, WCA additionally argues that the ITFS relative newcomer who seeks to convert to digital modulation must either protect the previously proposed offset station at the 45 dB D/U level, or obtain the consent of the previously proposed station's licensee in order to modify. The Foundation concludes that without Commission acceptance of the agreement-only bar to a previously proposed station's digital modification application, "it will be impossible to implement digital service in many major metropolitan areas."[142]

75. Very few of the Commission's rules governing the MDS and ITFS services deal directly with utilization of frequency offset techniques. Those that do primarily concern situations where one licensee seeks to have the Commission involuntarily impose frequency offset operations on another cochannel licensee in order to avoid or minimize interference.[143] Thus, the treatment of frequency offset in MDS and ITFS has been largely a matter of pronouncements in rulemaking proceedings and cases, and has undergone several changes. At first blush, clarification of the relative rights of the parties using the techniques may seem appropriate. However, apparently belying the ardor with which petitioning parties

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[137] *See* BellSouth Petition at 6.

[138] *See id*. at 7-8.

[139] *See id*. at 6-7.

[140] Petitioning parties maintain that MDS proposals to utilize frequency offset in lieu of satisfying the 45 dB D/U standard were not granted in the past.

[141] Regarding this scenario, WCA reiterates that unilateral assertion does not entitle the newcomer to any additional rights under the rules, as the neighboring station was under no obligation to maintain the frequency offset absent an agreement between the parties.

[142] Foundation Comments at 3.

[143] *See, e.g.*, 47 C.F.R. §§ 21.905(c), 21.939(a), and 74.961(c).

sought such a clarification, in the nearly three years since the period for filing petitions on the *Digital Declaratory Ruling* expired, we have not been made aware of any actual offset-based conflicts which have precluded any licensee's efforts to modify its station for digital operations. Because of our experience, we believe that delineating here a solution to a problem that we have not found to hamper the industry would not be the prudent course at this juncture. Nonetheless, should this issue make or break a licensee's attempt to convert to digital transmissions in a market, we are prepared fully to analyze the merits on an individual-case basis. Notwithstanding our caution in addressing alleged past offset-based conflicts, we specify that all future offset arrangements are to be governed by binding agreements between the parties, unless the Commission explicitly grants a waiver or imposes involuntary frequency offset operations on a licensee.[144] However, given the anticipated digital future of MDS and ITFS, requests for waiver of interference standards through use of offset techniques for analog transmissions will be viewed with the utmost scrutiny. Likewise, in the spirit of the *Second Wireless Cable Reconsideration Order*,[145] while we will continue to evaluate involuntary frequency offset proposals on a case-by-case basis, we will entertain such proposals only in the most compelling of circumstances.[146] Finally, we stated in the *Digital Declaratory Ruling*, as an interim measure subject to the outcome of a future rulemaking proceeding, that we will not mandate a particular frequency offset or tolerance for the pilot carrier stations utilizing VSB digital modulation.

D. ITFS Recapture Rights

76. In the *Digital Declaratory Ruling*, we declined to impose any changes in ITFS educational usage requirements and deferred consideration to a future rulemaking.[147] NIA filed a petition seeking reconsideration of this decision. In the *Two-Way Order*, we thoroughly reevaluated our ITFS educational usage requirements.[148] In light of our decisions in the *Two-Way Order*, we need not address the arguments advanced by NIA in its petition for reconsideration of the *Digital Declaratory Ruling*.[149]

V. OTHER RELATED PLEADINGS

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[144] *See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act - Competitive Bidding, Report and Order*, 10 FCC Rcd 9589, 9719 (1995); *Canistota Public Schools*, 10 FCC Rcd 13,649, 13,650 (1995).

[145] *Second Wireless Cable Order*, 10 FCC Rcd at 7093.

[146] *Cf. Canistota Public Schools*.

[147] *Digital Declaratory Ruling*, 11 FCC Rcd at 18,873.

[148] *See Two-Way Order*, 13 FCC Rcd at 19,152-62.

[149] In the *NPRM*, the Commission also rejected an assumption, expressed by one of the parties commenting on the *March 31 Public Notice,* that any rules adopted in the two-way transmissions proceeding would not foreclose consideration of a separate petition filed by NIA regarding ITFS educational usage requirements. 12 FCC Rcd at 22,204 n.60.

77. Shortly after release of the *Digital Declaratory Ruling*, the Mass Media Bureau released a Public Notice interpreting the *Digital Declaratory Ruling* to allow MDS and leased ITFS frequencies authorized for digital transmissions to carry point-to-multipoint data transmissions without any additional authorization by or notification to the Commission. However, the Bureau specified at the time that the *Digital Declaratory Ruling* did not contemplate use of such frequencies for upstream digital data transmissions.[150] On November 18, 1996, CAI filed an application for review of the *October 17 Public Notice*, requesting that the Commission clarify that "wireless cable operators retain the flexibility to provide two-way voice, data and video services"[151] so that MDS and leased ITFS frequencies may be used to provide those services on a permanent basis, without entailing costly and time-consuming waivers. In light of our actions in the *Two-Way Order*, we find that CAI's application for review is moot, and we dismiss it.

VI. PROCEDURAL MATTERS AND ORDERING CLAUSES

78. Accordingly, IT IS ORDERED that the above-referenced petitions for reconsideration and/or clarification of the *Order* ARE GRANTED IN PART AND DENIED IN PART, as described above.

79. IT IS FURTHER ORDERED that the above-referenced petitions for clarification of the *Digital Declaratory Ruling* ARE GRANTED IN PART AND DENIED IN PART, and that the *Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations* IS MODIFIED AND CLARIFIED to the extent specified above. These modifications and clarifications shall be effective upon the release of this order.[152]

80. IT IS FURTHER ORDERED that the application for review of the *October 17 Public Notice*, filed November 18, 1996 by CAI Wireless Systems, Inc., IS DISMISSED AS MOOT.

81. IT IS FURTHER ORDERED that, pursuant to the authority contained in Sections 4(i) and (j), 301, 303(f), 303(g), 303(h), 303(j), 303(r), 308(b), 403, and 405 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 301, 303(f), 303(g), 303(h), 303(j), 303(r), 308(b), 403, and 405, this *Report and Order on Reconsideration* IS ADOPTED, the *Order* IS MODIFIED AND CLARIFIED to the extent specified above, and Parts 21, 74, and 101 of the Commission's Rules, 47 C.F.R. §§ 21, 74, and 101, ARE AMENDED as set forth in the attached Appendix C.

82. The action contained herein has been analyzed with respect to the Paperwork Reduction Act of 1995 and found to impose new or modified reporting and recordkeeping requirements or burdens on the public. Implementation of these new or modified reporting and recordkeeping requirements will be subject to approval by the Office of Management and Budget (OMB) as prescribed by the Act. The new or modified paperwork requirements contained in this *Report and Order on Reconsideration* (which are subject to approval by OMB) will go into effect upon OMB approval. However, IT IS FURTHER ORDERED that the rule amendments set forth in Appendix C not pertaining to new or modified reporting or recordkeeping

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[150] "The Mass Media Bureau Implements Policy for Provision of Internet Service on MDS and Leased ITFS Frequencies," *Public Notice*, 11 FCC Rcd 22,419 (Mass Med. Bur. 1996) (hereinafter *October 17 Public Notice*).

[151] CAI Application for Review at 6.

[152] *See* 47 C.F.R. §§ 1.4(b)(2) and 1.103.

requirements WILL BECOME EFFECTIVE 60 days after their publication in the Federal Register.

83. As required by Section 604 of the Regulatory Flexibility Act, 5 U.S.C. § 604, the Commission has prepared a Supplemental Final Regulatory Flexibility Analysis of the possible impact on small entities of the rules and policies adopted in this document. *See* Appendix B. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, SHALL SEND a copy of this *Report and Order on Reconsideration*, including the Supplemental Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Román Salas
Secretary